

In the Specification:

Please amend and substitute the following paragraph for the paragraph beginning on page 9, line 3, as follows:

The stage assembly 10 is particularly useful for precisely positioning one or more devices 26 during a manufacturing and/or an inspection process in a controlled environment, such as a vacuum. The type of device 26 positioned and moved by the stage assembly 10 can be varied. For example, each of the devices 26 can be a reticle 28 and the stage assembly 10 can be used as part of an exposure apparatus 30 (illustrated in Figure 8) for precisely positioning the reticles 28 26 during manufacturing of a semiconductor wafer 32. Alternately, for example, the stage assembly 10 can be used to move other types of devices during manufacturing and/or inspection, to move a device under an electron microscope (not shown), or to move a device during a precision measurement operation (not shown).

Please amend and substitute the following paragraph for the paragraph beginning on page 15, line 29, as follows:

The required stroke 87 of the X housing movers 64, 66 along the X axis will vary according to desired use of the stage assembly 10. For an exposure apparatus 30, generally, the X stroke 87 of the X housing movers 64, 66 for moving the reticles 28 26 is between approximately zero millimeters and two hundred millimeters.

Please amend and substitute the following paragraph for the paragraph beginning on page 16, line 31, as follows:

With this design, the Y mover 68 makes relatively large displacement adjustments to the position of the stage body 50 along the Y axis. The required stroke of the Y mover 68 along the Y axis will vary according to desired use of the stage assembly 10. For an exposure apparatus 30, generally, the Y stroke of the Y movers

68 for moving the reticles 28 26 is between approximately two hundred and fifty millimeters and seven hundred and fifty millimeters.

Please amend and substitute the following paragraph for the paragraph beginning on page 30, line 3, as follows:

Figure 7A illustrates a second stage assembly 139 having features of the present invention. In this embodiment, the second stage assembly 139 includes a second guide base 140, a second stage 142, a second stage mover assembly 144 and a second stage bearing assembly 146. In this embodiment, the second guide base 140 is generally rectangular shaped and is secured to the mounting base 24 with a second base frame 148 (illustrated in Figure 8). The second stage 142 retains an object 153 such as the semiconductor wafer 32. The second stage mover assembly 144 moves the second stage 142 relative to the second guide base 140.

Please amend and substitute the following paragraph for the paragraph beginning on page 33, line 4, as follows:

The exposure apparatus 30 is particularly useful as a lithographic device that transfers a pattern (not shown) of an integrated circuit from the reticle 28 26 onto the semiconductor wafer 32. The stage assemblies 10, 139, 206, 210 are particularly useful in a controlled environment. Additionally, it should be noted that the stage assemblies 206, 210 can correspond to the stage assemblies 10, 139, as mentioned above, respectively. Thus, the present invention is particularly useful in an exposure apparatus 30 that utilizes an electron beam.

Please amend and substitute the following paragraph for the paragraph beginning on page 33, line 9, as follows:

The reticle chamber 216 encloses and encircles the reticle stage assembly 206 and provides the controlled environment around the reticle 28 26. The design of the

reticle chamber 216 can be varied to suit the design requirements of the exposure apparatus 30. The reticle chamber 216 illustrated in Figure 8 is generally rectangular shaped and defines a generally rectangular shaped chamber cavity.

Please amend and substitute the following paragraph for the paragraph beginning on page 33, line 31, as follows:

The illumination system 200 includes an illumination source 212 and an illumination optical assembly 214. The illumination source 212 emits a beam (irradiation) of light or electron beam energy. The illumination optical assembly 214 guides the beam from the illumination source 212 to the optical assembly 200. The beam illuminates selectively different portions of the reticle 28 26 and exposes the semiconductor wafer 32.

Please amend and substitute the following paragraph for the paragraph beginning on page 34, line 4, as follows:

The optical assembly 200 projects and/or focuses the light or electron beam passing through the reticle 26 to the wafer 32. Depending upon the design of the exposure apparatus 30, the optical assembly 200 can magnify or reduce the image illuminated on the reticle 26.

Please amend and substitute the following paragraph for the paragraph beginning on page 34, line 8, as follows:

The reticle stage assembly 206 holds and positions the reticle 26 relative to the optical assembly 200 and the wafer 32. Similarly, the wafer stage assembly 210 holds and positions the wafer 32 with respect to the projected image of the illuminated portions of the reticle 26 in the operational area. Depending upon the design, the exposure apparatus 30 can also include additional motors to move the stage assemblies 206, 210.